Proposal of a New FED Framework

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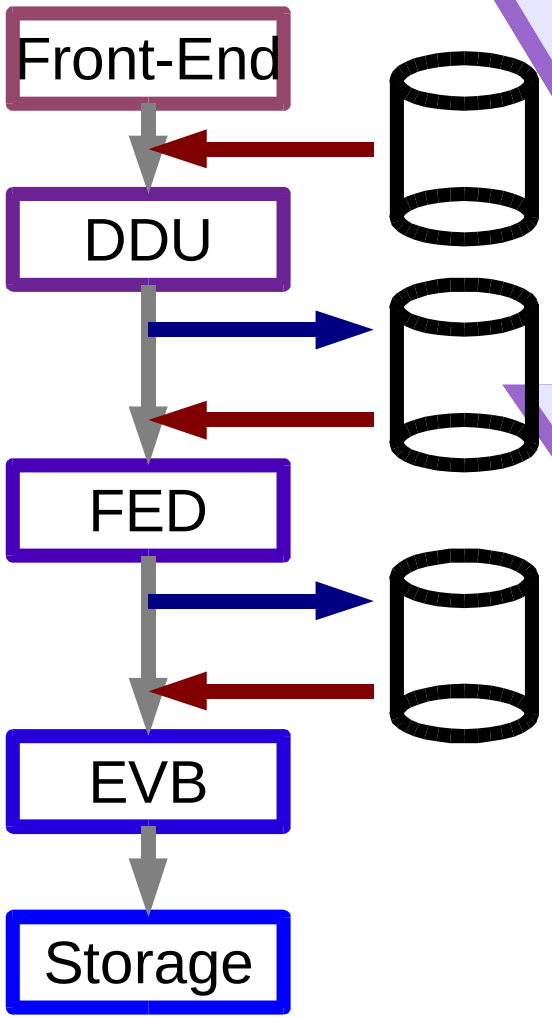
Requirements for the EMU DAQ

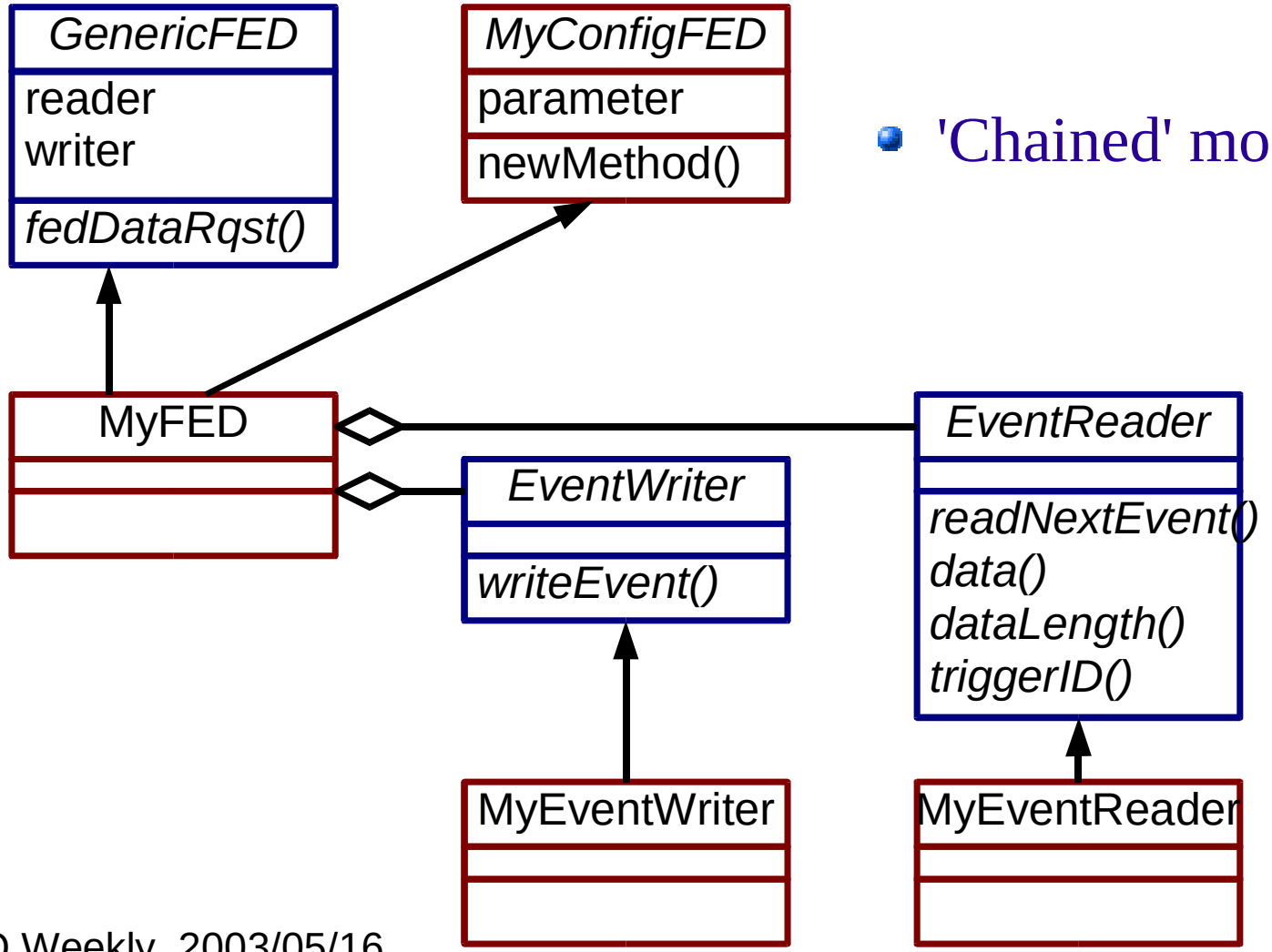
- XDAQ based
- Flexibility on input/output
  - Interchangeable input/output to local disk at each connection in DDU-FED-EVB chain (flat or ROOT format)
- Reusable code
  - among various DDUs
  - among various systems (beam-test, slice-test, local, final)



Decoupling of 'Generic' and 'Specific' parts

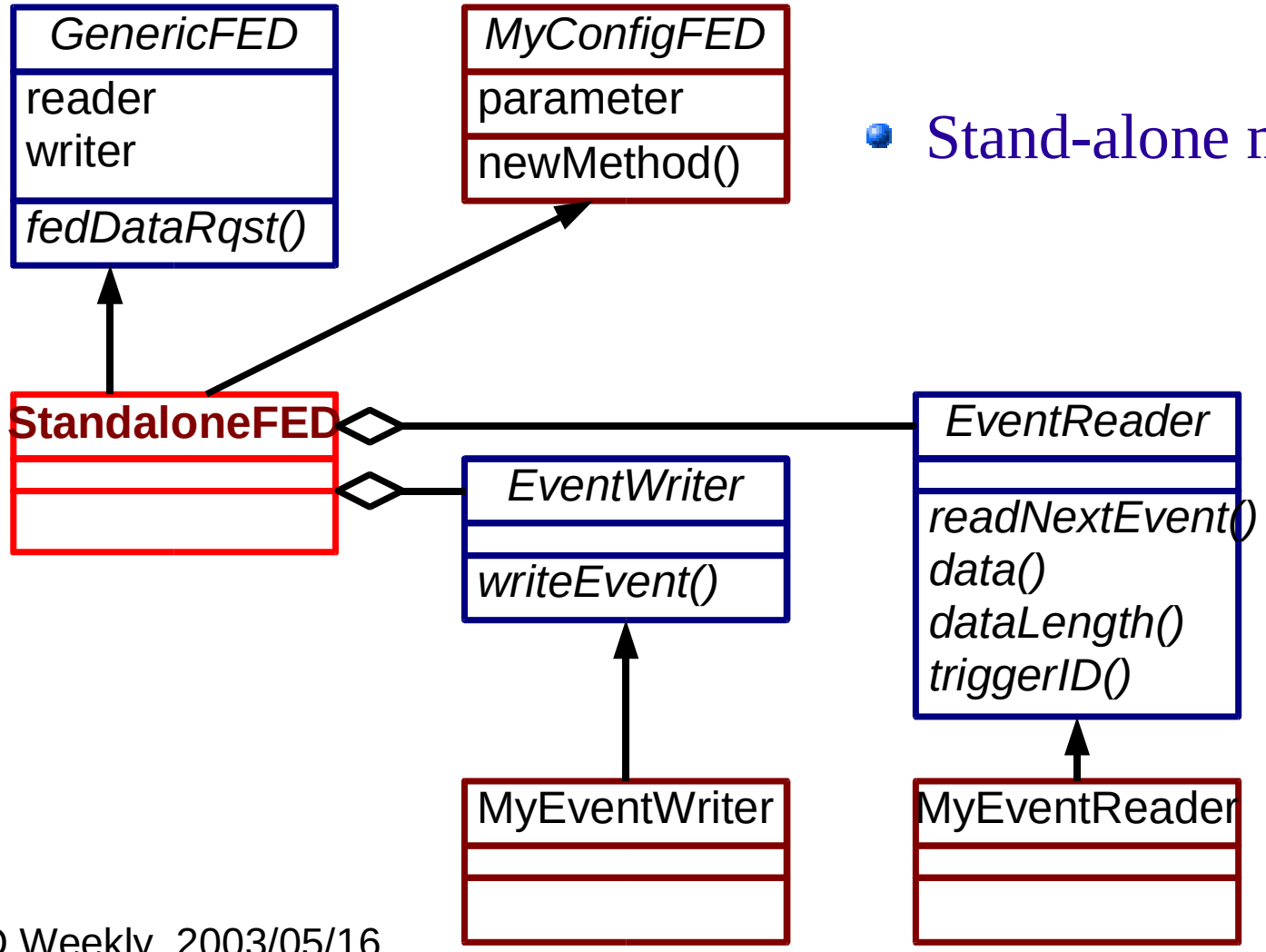
- DDU
  - Interface to the FED
  - Access to the real hardware
- FED
  - Interface to the EVB, read-format-send loop
  - Exported parameters, user-defined methods
- Input/Output
  - Interface to callers (FED, EVB)
  - Destination, format

Class Structure



- 'Chained' mode

Class Structure (cont'd)



- Stand-alone mode

Implementation

- Snap-shot (Dec. '02) version of the new EVB was enhanced to deal with FED-RU messages.
- All classes/interfaces were implemented. ('GenericFED' works only with the new EVB.)
- Automated test suite (sample FED, stub EVB and scripts) was provided.
- 'Chained' version of the EMU dependent concrete classed were implemented and tested. (R.W.)

Status/Plan

- EVBIM version of the 'GenericFED' is currently being tested.
- Similar mechanism will be applied to 'TriggerInterface' side.
- The whole software will be tested in EMU beam-test DAQ system (May - July '03)
- Adoption to the latest EVB code

This is a collaboration with the EMU DAQ group (P. Murray, R. Wilkinson) and the FNAL EVM group (D. Charak, I. Suzuki)